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THE BULLETIN OF THE AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTS

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THE BULLETIN OF THE AMERICAN ASSOCIATION OF PUBLIC HEALTH DENTISTS

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Volume 10 November, 1950 Number 4

A CONSIDERATION OF THE COST OF FLUORIDATION IN THE CONTROL OF CARIES*

Chester V. Tossy, D.D.S., M.P.H.**

The merit of fluoridation of a municipal water supply to secure a reduction in a community's prevalence of dental caries currently is being debated in a number of Michigan municipalities.

Confirmation, from epidemiological studies, that dental caries is reduced by more than 60 per cent, without an accompanying mottling of the teeth, in those geographical areas outside of Michigan in which the drinking water naturally contains approximately 1 p.p.m. of fluorine (in the form of fluoride), has lead to a serious consideration of the artificial addition of fluoride to local municipal water supplies. A number of experimental projects have been initiated in the United States and Canada to determine whether the same beneficial effect can be obtained from this artificial addition, and one of these projects, the largest and first to be initiated, is being conducted at Grand Rapids, Michigan. While favorable reports regarding reduction in caries have come from some of the study projects, no positive scientific evidence of benefit has been reported from the experimental study in Grand Rapids, now in its sixth year. This study was initiated with the knowledge that the length of the period of enamel calcification of the permanent teeth probably would require the elapse of eight to twelve years before thoroughly tangible evidence of benefit could be demonstrated.

With scientific evidence so near at hand, conservative people have advised awaiting complete confirmation, while another group of people, anxious to secure earlier benefits for the teeth of children, have urged the immediate fluoridation of all communal water supplies in the State on the basis of the presumptive evidence already reported. It would seem, without entering such a controversy, that a critical survey should be made of water consumption and the cost of fluoridation, both in a metropolis and an average size city. The issue of cost, whether the treatment should prove to be sufficiently beneficial or not, is bound to enter any controversy.

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*From the September, 1950, Journal of the Michigan State Dental Society.

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Some of the facets of the cost of treating a municipal water supply probably should be sketched at this point. It has been pointed out that, in main, only children through eight years of age will benefit from the fluoridation (only those children drinking the water from birth can secure maximum benefit), that considerable pumpage of treated water will have to be diverted to industrial or commercial use and that much of the domestic pumpage, even, will not be utilized as drinking water. Attention also has been called to the slight consumption of communal water by infants and children, from birth to two years of age, during a period in which considerable calcification of the primary and permanent teeth is taking place. It has been stated further, if the cost of fluoridation were to be assessed to the members of the limited age group, which, though consuming such a small amount of water for drinking purposes, presumably are the only ones to secure a benefit from it, that the cost per individual would be found to be quite significant. On the other hand, unless the charges for pumpage are assessed on the basis of the consumption of drinking water by the children in each family who are under eight years of age, the cost of fluoridation will be comparatively slight. It may be presumed that the cost of pumpage will be spread on the present metering system and that all adults and industries will be willing to bear the slightly additional proportionate cost of fluoridation if satisfactory evidence is submitted that the growing generation will benefit by a marked decrease in dental caries.

A comparative study of the cost of topical application of sodium fluoride to the teeth of children in order to obtain a 40 per cent reduction of dental caries also appears desirable. This method of utilizing fluoride, it should be pointed out, produces an immediate effect on the teeth of the children treated. It also is a valuable aid in the control of the dental caries of the present population of children, eight to seventeen years of age, whose tooth enamel already is calcified, and for approximately 750,000 rural Michigan children who will be unable to participate in the benefits obtained from fluoridation of public water supplies.

Water Consumption by Children Under Three Years

The first point to settle is the water consumption by infants and young children. From birth to six months of age an infant's requirement for water is accepted generally as 2.5 oz. of water per pound of body weight per day.[1] This requirement is reduced to 2 oz. of water per pound of body weight per day for the second six months of life. From the first to the third year, the daily requirement of water will be one quart (1500 c.c.), or approximately 10-20 oz. of water per day in addition to food.

Average Human Consumption of Water

For the human ingestion of fluorine in drinking water per se, Adolph[2] has devised a method of estimating the daily requirement. He estimates the daily water requirement as equal to 1.0 c.c. per calorie of energy in the daily diet. The daily water requirement varies, therefore, according to age and many other variable conditions. However, 1200-1600 c.c. of drinking water daily appears to be a reasonable estimate of the average daily intake. Other estimates from 1000-1500 c.c. also have been made.

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Water Pumpage and Consumption of Detroit Metropolitan Area

It has been estimated[3] that approximately 100-150 gallons of water per capita per day is pumped for all purposes, industrial and home consumption included. For the metropolitan area, Detroit, the average daily pumpage for the fiscal year July 1, 1948 - June 30, 1949, was 375,765,205 gallons.[4] The highest pumpage for a single day was 571,600,000 gallons. Total pumpage for the fiscal period was 137,154,300,000 gallons. Based on the previous estimate of average per capita pumpage per day,[3] it can be estimated further that fifty (50) gallons of water per day per capita is consumed for all domestic purposes. Pumpage figures follow for the past five years:

Yr. Ending June 30	Total Yearly Pumpage (Gals.)	Estimated Population Served as of June 30	Estimated Average Population Served	Daily per Capita Consumption
1945	119,202,800,000	2,297,709	2,322,417	141
1946	109,945,400,000	2,302,409	2,300,059	131
1947	125,089,700,000	2,450,000	2,376,205	144
1948	129,757,700,000	2,380,432	2,415,216	147
1949	137,154,300,000	2,455,820	2,418,126	155

The population of Ludington (Apr. 1950) was estimated at 10,500 people. Assuming that the city would pump an average of 150 gallons of water per capita per day the total annual pumpage then would be 566,662,500 gallons and daily pumpage would be 1,552,500 gallons.

Cost of Equipment and Chemical

1. Equipment

A gravimetric dry feeder has a range of capacity of 0.25 to 2000 lbs.[5] per hour. This type of equipment would be required for large cities. A liquid feed (hypochlorinator) type of equipment which has a range of capacity of 0.25 to 8 gallons per hour is suitable for smaller cities with an average pumpage of approximately 1,500,000 gallons daily.

For the Detroit metropolitan area two gravimetric dry feeders would be required (one for each pumping center). The range of capacity is a maximum of 48,000 lbs. daily for each gravimetric dry feeder. The highest daily pumpage for this area has never exceeded 600,000,000 gallons, which would require only 18,240 lbs. of sodium fluoride (90%) to produce a water supply containing 1 p.p.m. fluorine (as sodium fluoride). It has been found that 20.4 lbs. of compound (90% sodium fluoride) per million gallons of water is required to maintain a water supply containing this 1 p.p.m. level.

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Two additional feeders, however, should be available as stand-by emergency equipment. The four feeders, including installation, would cost $14,000.00. Each unit would cost approximately $2500.00 and installation approximately $1000.00. These units should last twenty years but their cost may be amortized over a period of ten years.

The hypochlorinator type of equipment, such as Ludington uses, can be purchased in duplicate and installed for $1200.00.[3]

2. Cost of Chemical

The cost of fluoridation previously has been estimated as the approximate cost per capita of one pound of sodium fluoride[2] annually. This price has varied from 7 to 15 cents per pound. The present price is about 11.5 cents per pound. A revision of this estimate now will be necessary because it is possible to employ another chemical, sodium fluosilicate (or sodium silico-fluoride as it is known commercially) at a demonstrated 75 per cent reduction in the cost of the chemical. The new chemical compound has some additional advantages inasmuch as it is no more toxic than sodium fluoride, has 20 per cent more available fluorine, and is 9 per cent purer than the commonly employed grade of sodium fluoride. It costs but 3.5 cents per pound.[2]

3. Comparison of Chemicals:

Chemical	Per Cent of Available F	Per Cent of Purity	Cost (¢) per Pound
Sodium Fluoride	40	90	11.5
Fluosilicate	60	99	3.5

4. Estimated Annual Cost of Fluoridation for Metropolitan Detroit (Based on fiscal year July 1, 1948-June 30, 1949)

a. Sodium Fluoride Estimated (on average population) @ 11.5¢/lb. $278,084.49

Actual Pumpage @ 20.4 lbs./million gals. $321,763.33
Amortized Cost of Equipment 1,400.00
Total Annual Cost $323,163.33

b. Sodium Fluosilicate
Actual Pumpage 69,605.81
Amortized Cost of Equipment 1,400.00
Total Annual Cost ..... $ 71,005.81

5. Estimated Cost of Fluoridation for Ludington

a. Sodium Fluoride

Assumed Pumpage (566,662,500 gals.)	$1,329.48
Amortized Cost of Equipment	120.00
Total Annual Cost	$1,449.48

b. Sodium Fluosilicate

Assumed Annual Pumpage	287.74
Amortized Cost of Equipment	120.00
Total Annual Cost	$ 407.74

Note: No extra personnel will be required for operation, testing or maintenance, regardless of the size of the city.[3]

6. Water Pumpage and Cost Distribution
Metropolitan Detroit

Annual Pumpage in Gallons	137,154,300,000
As Drinking Water for Population	220,653,998
As Drinking Water for Children (0-8 yrs.)	33,390,839
Population Served	2,418,126
Population Children (0-8 yrs.)	365,927
Pumpage Cost per Capita	$ 5.00
Pumpage Cost per Child (0-8 yrs.)	33.00
(Total operating revenue, fiscal year)	$12,020,795.00[4]
Additional Cost of Fluoridation ($Na_2Si F_6$)	71,005.81
Cost per Capita	.03
Cost per Child (0-8 yrs.)	.19
Cost per Gallon (all water)	.0000005
Cost per Gal. as Drinking Water (all) .	.00032
Cost per Gal. as Drinking Water (children 0-8 yrs.)	.0021

Since the total annual pumpage will not be affected whether the fluoride is applied or not, and since the water is metered, the additional cost probably will be distributed on the basis of use, regardless of the nature of that use. The slightly reduced consumption of water by infants hardly can affect the distribution of cost. For all practical purposes the increased rate of 3 cents per capita per year will be used in computation of cost. At a life expectancy of 70 years the total cost per individual for an expected reduction of 67 per cent in caries attack rate would be $2.10.

Cost of Topical Fluoride Program[6]
(Hypothetical Community of 50,000 Population)

In a community of 50,000 people, 7500 children may be expected to be found attending elementary schools (K to 8th grade). In the 2nd, 5th and 8th grades approximately 2,500 children may be anticipated. A dental hygienist, working full time, should be able to provide sodium fluoride applications for

this group annually, or provide special fluoride applications for the entire group (7500 children) on a continuing basis due to the 3-year interval.

This productivity would require an initial prophylactic cleansing and application of fluoride solution to 24 children daily and subsequent applications (until a total of four) to 72 children daily, or any combination of these requirements. It is assumed that the dental hygienist will work not less than 215 days annually. The area served, to keep travel at a minimum, should not be larger than the average county. Under these conditions an average of 12 children should be completed daily.

If the annual salary of a beginning dental hygienist is $3,000 per year and is gradually increased, her cost of travel assumed to reach a maximum of $50.00 per month, and the necessity for the purchase of equipment the first year considered with the spreading of its cost over three years, the approximate cost of the fluoride applications would vary from $1.50 to $2.00 per child once every three years, or a total of $4.50 to $6.00 per child for the three series of applications at the ages of 7, 10, and 13 years. The annual cost to the community would be 50¢ to 70¢ per child for the total of 7500 kindergarten through the 8th grade children, or 8¢ to 10¢ per capita (50,000 community population) per year. Figured for grade school children population only, the cost would be 80 cents per child per year. Affecting these figures will be a variation in cost of equipment and supplies and, also, variation in salaries, which is the principal factor affecting costs. If the program is handled by a full-time dentist, or a group of dentists part-time on an hourly basis, the cost will have to be adjusted for the cost of professional supervision. A 40 per cent reduction in dental caries may be expected for the treated school population.

Productive Time for Dental Hygienist[6]

Weeks in Calendar Year	52
Weeks loss of time	9
Weeks for making applications ..	43
Days per week worked	5
Productive days	215

Calculated Loss of Time

Holidays	8
Days illness	6
Days vacation	31
Days lost	45
Weeks of lost time	9

Calculated Children Treated

2500 annually, divided by 215 days = 11.7 or 12 children to be completed daily.

Comparison of Cost (Annual) in Cents per Capita

Water Fluoridation	3
Topical Application	8-10

Per Cent Reduction of Dental Caries

Water Fluoridation (no professional care)	67
Topical Application (repeated professional care)	40

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IN THE CONTROL OF CARIES

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4. Annual report for the fiscal year ending June 30, 1949. Detroit Department of Water Supply, 1949. VII 84 p. processed. (p. 54) (p. 3).

5. Procedure for the fluorination of public water supplies. Lansing, Michigan Department of Health. Jan. 1949. 4 p. processed. (p. 3) (p. 4).

6. Kleinschmidt, L. S. Personal communication, Apr. 1950. (Revised by Michigan Department of Health).

NEW ZEALAND SURVEY

Aside from the matter of compulsory health insurance no issue has raised more furore, within the dental profession, than that of developing a lesser trained dental personnel to render certain corrective dental services among children. High points of the pro and con arguments regarding this proposal may be listed as the last year's Massachusetts' legislation establishing such training (on an experimental basis), the subsequent repeal of that legislation, and the two surveys of the New Zealand dental nurse program, considered as a pattern for the proposed project in this country.

These surveys were each conducted by members of the A.A.P.H.D., both previously state dental directors, Dr. Allen O. Gruebbel, Secretary of the A.D.A. Council on Dental Health, and Dr. John Fulton, Dental Consultant of the Children's Bureau. An initial installment of Doctor Gruebbel's report was published in the September A.D.A. Journal. Limitations of space in the Bulletin makes reprinting this installment in entirety impossible. However, Doctor Gruebbel's self designated "conclusions" so succinctly cover the whole article that it is believed their reprinting together with preliminary excerpts will serve well to depict his findings. Reprinting from both the initial article and those to follow, has the approval of both Doctor Gruebbel and the Journal Editor, Dr. Lon W. Morrey.

On publication of Doctor Fulton's report the privilege of similarly reprinting an abstract or excerpts from it will be sought. Thus we will have an opportunity to consider both points of view.

NEW ZEALAND SURVEY

Report on the Study of Dental Public Health Services in New Zealand I

Dr. Allen O. Gruebbel, D.D.S., M.P.H.,
Chicago

The dental nurse plan was developed originally as a drastic measure to cope with an extremely large dental caries problem among the children of New Zealand. The high dental caries attack rate was in itself a serious matter, as it is today. But the problem was made even more critical because of the small number of dentists in relation to population and because so few dentists were interested in treating children.

Dentists who are still in practice in New Zealand, and who participated in the discussion when the dental nurse plan was proposed prior to 1921, are still of the opinion that the serious nature of the problem justified radical action. They state that the idea was proposed originally because of the "deplorable condition" of children's teeth, the relatively small number of dentists and the lack of interest on the part of the dental practitioner in treating children. A phrase which is commonly heard in New Zealand among dentists is that "the best that children and youth could expect in the way of dental health by the time they graduated from secondary school was to be able to obtain dentures."

The effect of the dental nurse scheme on the practice and development of pedodontics in New Zealand is deplorable. For more than 20 years, dentistry for children has been almost completely relegated to the dental nurse, who is concerned only with fillings, extractions and cleaning. Almost no attention is given to the problems of oral growth and development, oral function, and early diagnosis of pathologic conditions other than caries.

Since less than 2 per cent of the children in New Zealand receive dental care from private practitioners, there is almost no interest among the profession in this important branch of dentistry. This lack of interest has caused some misgiving among parents who have taken their children to a dentist after the school dental nurse had completed her routine treatment. These parents were anxious to know whether their children needed dental treatment in addition to that usually provided by the dental nurse. Some of the parents who were interviewed reported that they were told by the dentist that this phase of dentistry was being taken care of by the school dental nurse.

Until about two years ago, courses in pedodontics were not taught in the dental school in New Zealand. Such training was not provided because it was assumed that dental care for children was the province of the school dental nurse. An even more remarkable fact is that a few dentists in private practice who wished to learn more about dentistry for children, since they were asked occasionally to treat a child patient, visited the Dominion Training School for Dental Nurses and observed the clinic procedures in that institution, instead of visiting the dental school.

The dental nurse plan not only has had a deleterious effect on the progress of dentistry for children in New Zealand but has seriously hindered

the training of dental students and the advancement of dental research. It is indeed remarkable that for almost three decades so much emphasis was placed on reparative service and so little on research, in view of the fact that the only possible hope for reducing the cost of the scheme is through research which would lead to the discovery of preventive technics. The New Zealand Government is spending more than £548,000 ($1,534,400) on the School and Adolescent Dental Service and only £2,000 ($5,600) on dental research and less than £33,000 ($92,400) for dental education. Because of the large expenditure for dental treatment, appropriations for dental research and dental education are greatly curtailed.

The officials of the Government and the dental profession in New Zealand are now confronted with the problem of determining how far the State should go in supplying dental care to older age groups.

Although the School Dental Service has been successful in reducing the number of lost permanent teeth in children up to 13 years of age, the program has not materially influenced the loss of permanent teeth in older children. Apparently parents did not send their children to private practitioners when they were no longer eligible for dental treatment in school clinics.

When it was discovered that parents were not assuming responsibility for financing dental care for children over 12 years of age through their own financial resources, a new plan was devised to extend the dental services to include adolescents.

Theoretically, it is logical to believe that if dental nurses are qualified to treat children they should also be qualified to provide the same types of services for adolescents. When the proponents of the adolescent scheme are questioned regarding the reason why dental nurses cannot also treat adolescents, the usual answer is as follows: "Theoretically dental nurses are qualified to treat adolescents, but we do not care to go that far."

The dental profession and Government officials agree that adolescents should not be treated by the school dental nurse. The present policy of the Department of Health was expressed by the director of the Division of Dental Hygiene in a recent article when he stated: "The adolescent section of the community ... can best be dealt with by dental surgeons, as they are qualified to cope with the more advanced problems that arise in this group."[56]

The principle upon which this policy is based is not consistent with sound logic since, first of all, adolescents should not need extensive dental service if the school service is a success and, second, it should be no more difficult for a dental nurse to fill, clean or extract teeth for adolescents than it is for her to do so for children.

Furthermore, it is not sound reasoning to assume that the adolescent is in need of, or is entitled to, a more complete dental service provided by a more fully trained person, than are children. Actually the opposite probably

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56. Saunders, J. L. Current trends in public health dentistry. New Zealand D. J. 45:97 (April) 1949.

is true. Young children need such expert services as surgical treatment of the pulp, preventive and corrective orthodontic care and preventive and corrective treatment for abnormal growth and development—services which few children in New Zealand now receive.

Although the School Dental Service has been in operation since 1921, the dental health status of young adults who were examined for military service during World War II was not materially improved over that of the recruits in World War I.

Although no data could be found to permit a detailed comparison, a representative of the armed forces in New Zealand estimated that approximately 50 per cent of the recruits of World War I needed, or were wearing, partial or full dentures.

The records for World War II show that 58 per cent of recruits were wearing some type of artificial denture. The breakdown of this percentage is as follows: Twenty-five per cent of the recruits were completely edentulous and required full upper and lower artificial dentures. Twenty-five per cent were wearing either a full upper or a full lower artificial denture. Eight per cent were wearing one or two partial dentures.

Records also reveal that the recruits in World War II showed a reduction of approximately 33 per cent in the need of fillings as compared with those in World War I.

Although these data indicate that fewer teeth needed fillings because of carious lesions, the benefit derived from the School Dental Service in terms of extracted teeth or teeth needing extraction was lost by the time the young adults reached the age when they were subject to military service.

The record system used in the School Dental Service and the adolescent scheme is elaborate. It is designed primarily for reporting the quantity of service rendered and for providing a mechanism for enforcing policies and regulations. The record system does not supply suitable statistical data to determine the incidence and prevalence of dental disease and to evaluate, scientifically, the accomplishments of the State's dental services.

The housekeeping in the clinics is excellent. School dental nurses are neat in appearance and have poise and self-assurance. Child management is good and the procedure for calling children from the classroom for dental treatment is accomplished without unnecessary loss of time or confusion.

Authorities in the field of dentistry for children, no doubt, will seriously question the adequacy of supplies and equipment in rendering efficient and modern dental services for children. For example, school dental nurses are supplied with only two shades of silicate cement. Furthermore, the types of silicate cement used (Kryptex and Restorit) are not acceptable in modern dental practice.

School dental nurses are required to use copper amalgam for fillings in primary teeth and for prophylactic fillings in permanent teeth. Examinations

of children revealed that nearly all of the copper amalgam fillings in permanent teeth were faulty and needed to be replaced.

Some of the dental equipment used by school dental nurses also is not conducive to good dental practice. The portable dental chair and foot engines are symbolic of an era which modern dentistry has relegated to the past.

School dental nurses do not use or have access to x-ray machines. Satisfactory dental examination and diagnoses, therefore, cannot be made.

As was pointed out earlier, there is at present no scientifically tested system of measurements to evaluate the quality of dental treatment. Until well founded criteria are established, appraisals must, of necessity, be based on empirical judgment.

The quality of dental care rendered by school dental nurses was graded by the author on the basis of his observations in school dental clinics in New Zealand and on the data contained in the previous sections of this report, as follows:

Examination and diagnosis	Poor
Treatment planning	Poor
Observation of growth and development	Poor
Amalgam fillings	Mediocre
Oral prophylaxis	Good
Extractions	Mediocre
Preventive orthodontics	Poor
Appraisal of diet and nutrition	Poor
Child management	Good
Dental health education	Mediocre

Although school dental nurses are taught to follow the G. V. Black system of cavity preparation, it is common practice in school clinics to insert small fillings in occlusal pits and fissures, and not extend the cavity as recommended by Black.

The insertion of as many as five separate fillings in a single primary or permanent tooth by a school dental nurse may be due to (1) the high incidence of caries, (2) haphazard operative technics as a result of inadequate supervision and (3) a desire on the part of the school dental nurse to report the performance of a large volume of work.

There is almost no technical supervision of the operations performed by the school dental nurse. Although regulations require that the principal dental officer inspect the work of the school dental nurse at three-month intervals, his heavy schedule does not permit him to visit all the dental clinics in his district more frequently than once in six months in many cases.

NEW ZEALAND SURVEY

Conclusions

1. Dental examinations of children and youth in New Zealand reveal that the incidence of dental disease, particularly dental caries, is as high as or higher than in any other country for which data have been reported. Available evidence indicates that caries experience is at least twice as high as in most areas in the United States.

   The approach to a solution of this problem, from the very beginning, has been to develop a large scale reparative service. No attempt of any consequence was made to reduce the size of the problem through research and prevention. The high incidence of dental disease and the high cost of the reparative service will remain unchanged until more emphasis is placed on prevention and a greater proportion of available funds allotted to research.

2. The adoption of the dental nurse plan and adolescent dental scheme is in keeping with the way of life in New Zealand, which for many years has been based on the concept that the State has a primary responsibility for all of the essential needs of the individual, as contrasted to the concept which has wide acceptance in the United States that the individual is primarily responsible for his own personal needs and those of his family.

3. The universal dental care plan for children in New Zealand served as a beginning for a large scale system of state dentistry. Dental care for adolescents became the next step. Unless this trend of including additional age groups in the scheme is reversed, which seems unlikely, the provision of all dental service under the control of the State in the form of Social Security benefits is inevitable.

4. Dental services in New Zealand are dominated largely by representatives of Government, as is shown by the fact that there are 759 State employees listed under the category of "dental personnel" as compared with 667 private practitioners.

5. Dentistry for children, which many dental authorities believe to be the most important part of dental practice, is almost completely neglected by the dental profession in New Zealand and until three years ago was not taught in the dental school. Owing to the fact that under the dental nurse plan dental care for children has been relegated almost entirely to partly trained auxiliary personnel, the scheme has had a deleterious effect on the scientific development of pedodontics.

6. The deliberate effort to create a subprofessional outlook and attitude among school dental nurses is paradoxical and illogical. Although the school dental nurse is expected to provide a scientific health service, a considerable portion of which is of a surgical nature, she is given no scientific training, she is not encouraged to read scientific books or publications and she is not given an opportunity for continuing her dental education. School dental nurses are expected to diagnose Vincent's disease, gingivitis and anomalies, but they are given very little scientific training for making such diagnoses.

School dental nurses are trained to perform the mechanical operations involved in cleaning, filling and extracting teeth. The scientific aspects of these operations are deliberately excluded from the course of instruction in order that school dental nurses will not develop an attitude that they are members of a profession. Therefore, dental nurses should be classified as technicians in the same sense that a dental mechanic is a technician, the only difference being that in New Zealand the dental nurse is permitted by law to provide mechanical services in the oral cavity and dental laboratory technicians are not.

School dental nurses render operative and surgical services in the oral cavity without sufficient knowledge of the relationship between mouth health and general health. Only occasionally is superficial consideration given to space maintenance, to incipient deformity, to the preservation of function, to growth and development and to periodontal conditions. School dental nurses are not trained to perform these services. Therefore, they are not qualified to practice dentistry.

7. Parents in New Zealand have a false sense of security regarding the dental health of their children because of the belief that their dental health needs are being met. The public cannot be expected to know dentistry's role in a complete health service so long as dental treatment for children is limited largely to filling, extracting and cleaning teeth.

8. The dental profession in New Zealand at the present time is in an untenable position by insisting, on the one hand, that school dental nurses are fully qualified to render dental services for children and, on the other, that they are not qualified to render services for the adolescent. The argument presented is that the dental needs of youth (age 13-16) are more likely to require the services of a dentist. This contention does not conform with good logic. If it can be assumed that dental nurses with two years' training can fill, clean and extract teeth for children, it follows naturally that they can also fill, clean and extract teeth for youth, or even for adults. No amount of rationalization can overcome the sound argument that children are entitled to receive the same high quality of care and the same completeness of service as are adolescents.

9. There are many signs in New Zealand that the almost complete dependence of individuals on the State for personal needs has caused enormous economic, industrial and social problems and has deteriorated such desirable human qualities as self reliance and the ambition to create and achieve in spite of handicaps.

10. Political, cultural and economic consequences of socialism are strikingly evident in New Zealand. Excessive social legislation has greatly increased the power of central government and has lessened individual freedoms; it has encouraged mediocrity and has stifled the urge to excel; it has discouraged personal initiative and has caused heavy dependency on the State for individual needs; it has immensely increased the tax burden and, thereby, has reduced opportunities for capital investment in individual enterprise and commercial expansion.

DENTAL PERSONNEL REMUNERATION

Such interest has been shown in the tabulations derived from a recent survey on salaries of various personnel employed in public dental health activities that it has been deemed desirable to make them a matter of record and reference by publishing them in the Bulletin. As a preface to the tables a brief explanation relative to non-inclusion of certain states seems indicated.

The original questionnaire was sent to all states in which there was known to be a dental health activity within the official state agency. Those not listed in the accompanying tables represent both states without programs and those who failed to return the questionnaire. But the 34 states listed represent a majority sample and give a fairly adequate report for the United States as a whole. Data on two states are from sources other than the questionnaire.

Some instances of upward revision of the listed salary ranges have been reported since the original report was made. However, replies to a second questionnaire disclose that but few states are at present contemplating salary revisions and in large measure the quoted ranges may be taken as presently correct.

The dual reports of "minimum-maximum" and "maximum-minimum" have been made in an effort to clarify the standing of states from both angles. The variations in the ranges is one of the interesting matters disclosed by the tables. Similar salaries have been listed in the order of receipt of returned questionnaires.

Notes Regarding Accompanying Tables

* Certain sources of data expressed preference that name of State not be published. These States are designated by letters A, B, C, D, E and F.

Note 1 - Effective Sept. 10, 1950, all dentists in state employ received annual salary increases of from $1020 to $1260.

Note 2 - Plus "Cost of Living Bonus" of $468.00 per year.

Note 3 - Effort being made to secure increases.

Note 4 - Subject to early revision.

Note 5 - State and County Directors permitted to engage in private practice.

Note 6 - Non-dentist director.

Note 7 - State services being reclassified at present.

Note 8 - Upward revision of salaries now underway; hence no report.

DENTAL PERSONNEL REMUNERATION

Note 9 - Range covers salaries of P. H. Dentists I, II and III.

Data on "municipal dental directors" and "Other dental personnel" were too meagre to justify tabulation.

N.B. - Late permission received to identify "State C" as Wisconsin.

State * Dental Directors Salary Ranges

In Order of Minimum				In Order of Maximum			
1.California	$8,940.00	to	$10,860.00	1.California	$10,860.00	from	$8,940.00
2.New York	8,013.00	"	9,588.00	2.S.Carolina	10,000.00	"	7,500.00
3.State "A"	7,600.00	"	8,600.00	3.W.Virginia	9,600.00	"	7,200.00
4.State "B"	7,560.00	"	9,060.00	4.Louisiana	9,600.00	"	7,200.00
5.Michigan (1)	7,560.00	"	8,760.00	5.New York	9,588.00	"	8,013.00
6.S.Carolina	7,500.00	"	10,000.00	6.Washington	9,440.00	"	7,240.00
7.Washington	7,240.00	"	9,440.00	7.State "B"	9,060.00	"	7,560.00
8.Minnesota	7,200.00	"	9,196.00	8.Tennessee	9,000.00	"	7,200.00
9.W.Virginia	7,200.00	"	9,600.00	9.Missouri	8,880.00	"	7,200.00
10.Louisiana	7,200.00	"	9,600.00	10.Georgia	8,800.00	"	6,600.00
11.Tennessee	7,200.00	"	9,000.00	11.Michigan (1)	8,760.00	"	7,560.00
12.Missouri	7,200.00	"	8,880.00	12.Illinois	8,712.00	"	6,800.00
13.N.Carolina	7,200.00	"	8,400.00	13.State "A"	8,600.00	"	7,600.00
14.Texas	7,200.00	"	8,400.00	14.State "D"	8,500.00	"	6,000.00
15.Oregon	7,200.00	"	8,400.00	15.N.Carolina	8,400.00	"	7,200.00
16.State "C" (2)	7,080.00	"	8,400.00	16.Oregon	8,400.00	"	7,200.00
17.Illinois	6,800.00	"	8,712.00	17.Texas	8,400.00	"	7,200.00
18.Colorado (3)	6,750.00	"	6,750.00	18.State "C"(2)	8,400.00	"	7,080.00

DENTAL PERSONNEL REMUNERATION

19. Georgia	$6,600.00	to	$8,200.00	19. Minnesota	$8,196.00	from	$7,236.00
20. Indiana	6,600.00	"	8,100.00	20. Indiana	8,100.00	"	6,600.00
21. Virginia (4)	6,408.00	"	7,416.00	21. Connecticut	7,980.00	"	6,180.00
22. Connecticut	6,180.00	"	7,980.00	22. New Jersey	7,500.00	"	6,000.00
23. State "D"	6,000.00	"	8,500.00	23. N. Dakota	7,500.00	"	6,000.00
24. New Jersey	6,000.00	"	7,500.00	24. State "E"	7,500.00	"	5,940.00
25. N. Dakota	6,000.00	"	7,500.00	25. Virginia (4)	7,416.00	"	6,408.00
26. State "E"	5,940.00	"	7,500.00	26. Maryland	6,875.00	"	5,500.00
27. S. Dakota	5,640.00	"	6,600.00	27. Colorado (3)	6,750.00	"	6,750.00
28. Maryland	5,500.00	"	6,875.00	28. S. Dakota	6,600.00	"	5,640.00
29. Alabama	5,400.00	"	5,400.00	29. Iowa	6,000.00	"	5,100.00
30. Pennsylvania (5)	5,196.00	"	5,772.00	30. Mississippi (6)	6,000.00	"	5,000.00
31. Iowa	5,100.00	"	6,000.00	31. Pennsylvania (5)	5,772.00	"	5,196.00
32. Mississippi (6)	5,000.00	"	6,000.00	32. Alabama	5,400.00	"	5,400.00
33. State "F" (7)	4,700.00	"	5,300.00	33. State "F" (7)	5,300.00	"	4,700.00
34. Kentucky (8)				34. Kentucky (8)			

Assistant State Dental Directors
Salary Ranges

In Order of Minimum				In Order of Maximum			
1. California	$7,728.00	to	$9,396.00	1. California	$9,396.00	from	$7,728.00
2. State "B"	6,660.00	"	8,160.00	2. State "B"	8,160.00	"	6,660.00
3. New York	6,070.00	"	7,330.00	3. New York	7,330.00	"	6,070.00
4. New Jersey	4,500.00	"	6,000.00	4. New Jersey	6,000.00	"	4,500.00

DENTAL PERSONNEL REMUNERATION

State Public Health Dentists
("Regional" or "Senior")
Salary Ranges

In Order of Minimum				In Order of Maximum			
1.State "C" (2)	$6,120.00	to	$7,080.00	1.Missouri(9)	$8,208.00	from	$4,656.00
2.Tennessee	6,000.00	"	7,200.00	2.Tennessee	7,200.00	"	6,000.00
3.Georgia	5,640.00	"	6,800.00	3.State "C"(2)	7,080.00	"	6,120.00
4.New York	5,232.00	"	6,407.00	4.Georgia	6,800.00	"	5,640.00
5.Minnesota	5,232.00	"	5,932.00	5.New York	6,407.00	"	5,232.00
6.Missouri(9)	4,656.00	"	8,208.00	6.New Jersey	6,000.00	"	4,500.00
7.New Jersey	4,500.00	"	6,000.00	7.Minnesota	5,932.00	"	4,000.00

County Dental Directors
Salary Ranges

In Order of Minimum				In Order of Maximum			
1.California	$6,060.00	to	$8,712.00	1.California	$8,712.00	from	$6,060.00
2.Louisiana	6,000.00	"	7,500.00	2.Illinois	8,490.00	"	4,800.00
3.Tennessee	6,000.00	"	7,200.00	3.Georgia	7,800.00	"	4,200.00
4.Texas	5,700.00	"	7,200.00	4.Louisiana	7,500.00	"	6,000.00
5.Alabama	5,700.00	"	5,700.00	5.Tennessee	7,200.00	"	6,000.00
6.Minnesota	5,232.00	"	5,952.00	6.Texas	7,200.00	"	5,700.00
7.Illinois	4,800.00	"	8,490.00	7.Michigan(1)	6,500.00	"	4,000.00
8.Mississippi	4,600.00	"	5,800.00	8.Minnesota	5,952.00	"	5,232.00
9.Georgia	4,200.00	"	7,800.00	9.Mississippi	5,800.00	"	4,600.00
10.Pennsylvania(5)	4,176.00	"	4,668.00	10.Alabama	5,700.00	"	5,700.00
11.Michigan(1)	4,000.00	"	6,500.00	11.Maryland	5,000.00	"	4,000.00
12.Maryland	4,000.00	"	5,000.00	12.Pennsylvania (5)	4,668.00	"	4,176.00

DENTAL PERSONNEL REMUNERATION

School Dentists
Salary Ranges

In Order of Minimum				In Order of Maximum			
1.N.Carolina	$6,000.00	to	$7,200.00	1.N.Carolina	$7,200.00	from	$6,000.00
2.Colorado (3)	6,000.00	"	6,000.00	2.Texas	7,200.00	"	5,700.00
3.Connecticut	5,940.00	"	7,140.00	3.Connecticut	7,140.00	"	5,940.00
4.Texas	5,700.00	"	7,200.00	4.Michigan (1)	6,500.00	"	4,000.00
5.State "A"	5,400.00	"	6,400.00	5.New York	6,407.00	"	5,232.00
6.New York	5,232.00	"	6,407.00	6.State "A"	6,400.00	"	5,400.00
7.Virginia (4)	5,064.00	"	6,072.00	7.W.Virginia	6,240.00	"	4,200.00
8.Tennessee	5,020.00	"	6,000.00	8.S.Carolina	6,120.00	"	4,500.00
9.State "E"	5,000.00	"	6,000.00	9.Virginia (4)	6,072.00	"	5,064.00
10.S.Carolina	4,500.00	"	6,120.00	10.Colorado (3)	6,000.00	"	6,000.00
11.State "D"	4,320.00	"	6,000.00	11.Tennessee	6,000.00	"	5,020.00
12.W.Virginia	4,200.00	"	6,240.00	12.State "E"	6,000.00	"	5,000.00
13.Georgia	4,200.00	"	4,800.00	13.State "D"	6,000.00	"	4,320.00
14.Michigan (1)	4,000.00	"	6,500.00	14.Illinois	6,000.00	"	3,600.00
15.Maryland	4,000.00	"	5,000.00	15.Indiana	5,400.00	"	3,900.00
16.State "F" (7)	4,000.00	"	4,120.00	16.Maryland	5,000.00	"	4,000.00
17.Indiana	3,900.00	"	5,400.00	17.Georgia	4,800.00	"	4,200.00
18.Illinois	3,000.00	"	4,000.00	18.State "F" (7)	4,120.00	"	4,000.00
19.State "B"	3,000.00	"	4,000.00	19.State "B"	4,000.00	"	3,000.00

Dental Hygienists (Supervisory)
Salary Ranges

In Order of Minimum				In Order of Maximum			
1.California	$4,740.00	to	$5,496.00	1.California	$5,496.00	from	$4,740.00
2.Michigan (1)	4,000.00	"	4,000.00	2.State "C"(2)	4,140.00	"	3,420.00

DENTAL PERSONNEL REMUNERATION

3.State "C" (2)	$3,420.00	to	$4,140.00	3.Louisiana	$4,120.00	from	$2,820.00
4.State "B"	3,240.00	"	3,840.00	4.Michigan (1)	4,000.00	"	4,000.00
5.Connecticut	3,180.00	"	3,900.00	5.Connecticut	3,900.00	"	3,180.00
6.New York	3,174.00	"	3,864.00	6.Indiana	3,900.00	"	2,700.00
7.Pennsylvania	3,168.00	"	3,516.00	7.New York	3,864.00	"	3,174.00
8.State "A"	3,100.00	"	3,850.00	8.State "A"	3,850.00	"	3,100.00
9.N.Dakota	3,000.00	"	3,780.00	9.State "B"	3,840.00	"	3,240.00
10.Tennessee	2,940.00	"	3,480.00	10.N.Dakota	3,780.00	"	3,000.00
11.Minnesota	2,928.00	"	3,408.00	11.Pennsylvania	3,516.00	"	3,168.00
12.S.Dakota	2,880.00	"	3,360.00	12.Tennessee	3,480.00	"	2,940.00
13.Louisiana	2,820.00	"	4,020.00	13.Minnesota	3,408.00	"	2,928.00
14.State "E"	2,760.00	"	3,360.00	14.S.Dakota	3,360.00	"	2,880.00
15.Indiana	2,700.00	"	3,900.00	15.State "E"	3,360.00	"	2,760.00
16.State "F" (7)	2,700.00	"	3,000.00	16.Maryland	3,147.00	"	2,517.00
17.Maryland	2,517.00	"	3,147.00	17.State "F" (7)	3,000.00	"	2,700.00
18.Mississippi	2,500.00	"	3,000.00	18.Mississippi	3,000.00	"	2,500.00
19.Alabama	2,160.00	"	2,760.00	19.Alabama	2,760.00	"	2,160.00

Dental Hygienists (Non-Supervisory)
Salary Ranges

In Order of Minimum				In Order of Maximum			
1.California	$3,276.00	to	$4,144.00	1.California	$4,144.00	from	$3,276.00
2.State "C" (2)	3,180.00	"	3,180.00	2.Illinois	4,032.00	"	2,700.00
3.Michigan (1)	2,900.00	"	3,600.00	3.W. Virginia	3,900.00	"	2,100.00
4.State "A"	2,875.00	"	3,355.00	4.Michigan (1)	3,600.00	"	2,900.00
5.Illinois	2,700.00	"	4,032.00	5.N.Dakota	3,600.00	"	2,700.00

DENTAL PERSONNEL REMUNERATION

6.N.Dakota	$2,700.00	to	$3,600.00
7.Maryland	2,517.00	"	3,147.00
8.New York	2,484.00	"	3,450.00
9.Connecticut	2,460.00	"	3,300.00
10.State "B"	2,460.00	"	3,000.00
11.Indiana	2,400.00	"	3,600.00
12.State "E"	2,400.00	"	3,000.00
13.Tennessee	2,400.00	"	2,950.00
14.S.Dakota	2,400.00	"	2,880.00
15.Georgia	2,400.00	"	2,760.00
16.Colorado (3)	2,160.00	"	2,440.00
17.Pennsylvania	2,124.00	"	2,496.00
18.W.Virginia	2,100.00	"	3,900.00
19.S.Carolina	2,100.00	"	2,775.00
20.State "F" (7)	2,100.00	"	2,500.00
21.Mississippi	2,040.00	"	2,900.00

6.Indiana	$3,600.00	from	$2,400.00
7.New York	3,450.00	"	2,484.00
8.State "A"	3,355.00	"	2,875.00
9.Connecticut	3,300.00	"	2,460.00
10.State "C" (2)	3,180.00	"	3,180.00
11.Maryland	3,147.00	"	2,517.00
12.State "B"	3,000.00	"	2,460.00
13.State "E"	3,000.00	"	2,400.00
14.Tennessee	2,950.00	"	2,400.00
15.Mississippi	2,900.00	"	2,040.00
16.S.Dakota	2,880.00	"	2,400.00
17.S.Carolina	2,775.00	"	2,100.00
18.Georgia	2,760.00	"	2,400.00
19.State "F"(7)	2,500.00	"	2,100.00
20.Pennsylvania	2,496.00	"	2,124.00
21.Colorado (3)	2,440.00	"	2,160.00

Dental Health Educators
Salary Ranges

In Order of Minimum

1.California	$7,200.00		
2.Texas	5,700.00	to	$7,200.00
3.Louisiana	4,200.00	"	5,400.00
4.Georgia	3,600.00	"	5,240.00
5.Michigan (1)	3,360.00	"	3,840.00
6.State "D"	3,060.00	"	3,660.00
7.Minnesota	3,048.00	"	3,528.00

In Order of Maximum

1.California	$7,200.00		
2.Texas	7,200.00	from	$5,700.00
3.Louisiana	5,400.00	"	4,200.00
4.Georgia	5,240.00	"	3,600.00
5.S.Carolina	4,080.00	"	3,000.00
6.Illinois	4,032.00	"	2,700.00
7.Indiana	3,900.00	"	2,700.00

DENTAL PERSONNEL REMUNERATION

8.S.Carolina	$3,000.00	to	$4,080.00	8.Michigan (1)	$3,840.00	from	$3,360.00
9.Illinois	2,700.00	"	4,032.00	9.State "D"	3,660.00	"	3,060.00
10.Indiana	2,700.00	"	3,900.00	10.Minnesota	3,528.00	"	3,040.00
11.Pennsylvania	2,496.00	"	2,820.00	11.Pennsylvania	2,820.00	"	2,496.00
12.Alabama	2,400.00			12.Alabama	2,400.00		

REPORT OF COMMITTEE ON LIAISON WITH SPECIALTY BOARDS

On October 18, 1949 (San Francisco) the Advisory Board For Dental Specialties passed a resolution favoring the organization of a specialty board in public health as a specialty of dentistry and recommended that the Council on Dental Education be so informed. The Advisory Board for Dental Specialties met again on March 27, 1950, at French Lick, Indiana, with no representatives of the A.A.P.H.D. in attendance. Minutes of this meeting indicate a preoccupation with the preceptor method of training Specialists and no business transpired which had any direct bearing on our group or its particular interests.

Since the last report of the Committee on Training and Educational qualifications (See May 1950 Bulletin p.20) the stipulations in the motions following the report made February 1950 have been carried out. That is, the constitution and by-laws of the proposed American Board of Dental Public Health have been through several revisions and published in a subsequent issue of the Bulletin.

The Executive Council of the A.A.P.H.D. appointed Drs. W. A. Jordan, R. A. Downs and W. J. Pelton as members of the founding group to establish the new Board. Upon the advice and recommendation of the Dental Health Section of the A.P.H.A., the Executive Board of that organization subsequently appointed Drs. P. E. Blackerby and J. W. Knutson as their representatives to the Board's founding group.

The American Board of Dental Public Health had its first organizational meeting in Washington early in June, elected officers and carried out the necessary duties to qualify the group as an incorporated body. Incorporation was accomplished in July, 1950, and an application for recognition was submitted on July 28th to the Council on Dental Education of the American Dental Association. Formal action and approval by the Council of American Dental Education is now desirable, but apparently not necessary for the Board to proceed to function.

Respectfully submitted with recommendation that the report be accepted.

W. J. Pelton
W. A. Jordan

E D I T O R I A L

SUBSTITUTION vs ADJUNCT

It has been variously suggested that programs of fluoride therapy (either or both fluoridation and topical application) may be substituted for existing educational and care programs in dental health. Largely, it is to be hoped, this idea is to be credited to only the laity. Certainly no dentist, most certainly no public health dentist, would agree to any such proposal.

The suggestion is more than naive; it is dangerous. Based on an erroneous opinion that in fluoride therapy there has been developed a panacea for dental caries, any such substitution might well defeat the purpose toward which all dental health activities are directed, improved oral health.

Fluoride therapy has never been promised as a preventive of all future dental caries. The reported 60% reduction in caries incidence in fluoridated water areas leaves 40% of caries incidence to be given needed care; the 40% reduction through topical application leaves a 60% incidence to be attended. Both fluoride methods, in spite of 60% plus 40% equalling 100%, will not eliminate all future caries. To anticipate such results might terminate in unattended caries that, in turn, will develop into as deplorable dental conditions as have existed in the past.

As an "adjunct" to dental health education and dental corrective care programs fluoride therapy seems to promise the greatest boon in the history of dental health activities. Wherever and whenever possible all authenticated methods of dental health maintenance should be developed. When care programs cannot, for one reason or another, be conducted, a fluoride therapy program may logically be carried on by itself. But that arrangement should not be accepted as the ultimate in effort. To do so promises disaster.

GRANTS-IN-AID

From the called meeting, in Washington last June, of state dental directors there emanated the almost unanimous opinion that grants-in-aid were the method of preference in providing Federal financial assistance to states in promotion of dental health programs. This opinion was supported in principle by dentists serving as spokesmen for the U.S.P.H.Service. Hence, there seems to be but one main question about grants-in-aid.

When?

EDITORIAL

WIDENING HORIZONS

Time was - even in the memory of many still active dental health workers - when dental health programs were devoted largely (if not entirely) to the dissemination of not too accurate data relative to mouth health. Time has wrought changes in that limited concept.

The basic importance of education in dental health has not been cast aside. Rather, many of the inaccuracies have been corrected, giving an authenticity to present educational material. And to the store of authentic knowledge has been added new data from the research laboratory and from experience.

But the boundaries of public dental health activity have expanded elsewhere than in the matter of health education. An A.D.A. sponsored national dental health program, care programs for adults as well as children; problems involved in geriodontia; personnel problems, such as the legality of dental hygienists using sodium fluoride and the matter of "dental nurses"; compulsory vs. voluntary health insurance; analyses of corrective dental care costs; mobile dental facilities costing thousands of dollars; acquaintance with, evaluation of and demonstration projects employing the latest dental research findings; and, of course, the ever present problem of financing; all these and others constitute the new concept of dental health activity.

Of course, the horizon hasn't really widened. It was there, the same, twenty, thirty and more years ago. What has happened is that dental health workers together with others of the dental profession have progressed through the woods and up the hill until new vistas have appeared and have given incentive for adding new responsibilities to old ones.

In fact, the real width of the horizon is still not to be discerned, possibly never will be. And that's good! Good, because as Tennyson wrote it:

> "Yet all experience is an arch wherethrough
> Gleams that untravelled world
> Whose margins fade forever and forever
> As I move. How dull it is to pause;
> To Make an end; to rust unburnished
> Not to shine in use."

REVIEW OF BOOKS AND ARTICLES
A. L. Russell, Associate Editor

Bull, F. A. CONTROL OF DENTAL CARIES BY THE ADDITION OF FLUORIDES TO PUBLIC WATER SUPPLIES. Am. Dent. A. J., 41:146-51, Aug. 1950.

Such a paper, by this author, couldn't be anything but a forceful argument pro fluoridation. It is. Some will object that Frank takes a bit too much for granted here and there. He does. But his bets have paid off in the past, so we'll continue to string along with the champion.

Hill, I. N., Blayney, J. R., and Wolf, Walter. THE EVANSTON DENTAL CARIES STUDY. VI. A COMPARISON OF THE PREFLUORIDE WITH THE POSTFLUORIDE CARIES EXPERIENCE OF 6-, 7-, AND 8-YEAR-OLD CHILDREN IN THE STUDY AREA (Evanston, Ill.) J. Dent. Res., 29:524-40, Aug. 1950.

This reports some findings before and from 12 to 22 months after fluoridation. Caries prevalence was unchanged in deciduous teeth, dropped in first permanent molars. These should be considered as base-line data; the authors are correct in warning that factors other than fluoridation may have had a hand in the first molar picture. (Looks to us as though the apparent drop in caries-free first molars might be due to differences in the eruption age of 6-year olds in 1946 and 1948, for example).

Klinkenberg, Egil, and Bibby, B. G. THE EFFECT OF TOPICAL APPLICATIONS OF FLUORIDES ON DENTAL CARIES IN YOUNG ADULTS. J. Dent. Res., 29:4-7, Feb. 1950.

The authors report an inhibition of caries in 139 freshman and sophomore dental students averaging 25 years of age.

Ast, D. B., Bushel, Arthur, and Chase, Helen C. A CLINICAL STUDY OF CARIES PROPHYLAXIS WITH ZINC CHLORIDE AND POTASSIUM FERROCYANIDE. Am. Dent. A. J., 41:437-42, Oct. 1950.

It didn't work.

REVIEW OF BOOKS AND ARTICLES

Bureau of Economic Research and Statistics, American Dental Association. NINETEEN FIFTY SURVEY OF THE DENTAL PROFESSION. I. Introduction. Am. Dent. A. J., 41:253-60, Aug. 1950. II. The dentist and certain aspects of his training and practice. Ibid, 41:376-82, Sept. 1950. III. The dentist's work week. Ibid, 41-505-10, Oct. 1950.

Dependable information concerning that key man in dental public health—the family dentist.

Gruebbel, A. O. REPORT ON THE STUDY OF DENTAL PUBLIC HEALTH SERVICES IN NEW ZEALAND. I. Am. Dent. A. J., 41:275-83, Sept. 1950. II. Ibid, 41:422-36, Oct. 1950.

These reports give the background of the New Zealand movement in considerable detail. If you want more, it can be obtained from the ADA as per page 422 of the October issue of the Journal.

Mountin, J. W. PUBLIC HEALTH AND THE AGING. Pub. Health Rep., 65:795-802, June 23, 1950.

Having conquered most childhood disease problems, medicine is faced with the public health problems of the aging and aged. Dental public health, now concerned with the diseases of childhood, will someday find itself in that same position. This is worth tucking away in your mind for future use.

Manly, R. S., and Shiere, F. R. THE EFFECT OF DENTAL DEFICIENCY ON MASTICATION AND FOOD PREFERENCE. Oral Surg., Oral Med., & Oral Path., 3:674-85, May 1950.

It has always seemed logical that missing teeth impaired the efficiency of the denture; but quotable evidence has been hard to find. Here's some solid ammunition for that battle to save those first permanent molars.

McClure, F. J. AVAILABILITY OF FLUORINE IN SODIUM FLUORIDE VS. SODIUM FLUOSILICATE. Pub. Health Rep., 65:1175-86, Sept. 15, 1950.

The cost of chemicals for fluoridation with sodium fluosilicate would be about 35 per cent of the cost of chemicals for fluoridation with sodium fluoride. This initial report indicates that the uptake of fluoride by body tissues in rats was substantially the same when the two compounds were fed. Studies on caries inhibition effects are continuing.

REVIEW OF BOOKS AND ARTICLES

Dunning, J. M. VARIABILITY IN DENTAL CARIES EXPERIENCE AND ITS IMPLICATION UPON SAMPLE SIZE. J. Dent. Res., 29:541-8, Aug. 1950.

Fair warning: this one deals with statistical method. But if it seems obscure to you, that's all the more reason for digging into the thing. Dunning's main points here are simple enough, and had they been observed universally in the past dentistry would have avoided some of the howling errors that plague us today. (Though we can't pass up this chance to point out that Table I is a better illustration of gross bias than of the operators' examining error).

Arnold, F. A., Jr. THE USE OF FLUORIDES IN THE PRACTICE OF DENTAL MEDICINE. Oral Surg., Oral Med., & Oral Path., 3:622-30, May 1950.

A penetrating summary, quite quotable.

N O T E S and N E W S

ATLANTIC CITY PROGRAM
(Late News)

Annual A.A.P.H.D. Meeting

Detailed report of the annual business and scientific sessions of the AAPHD will be published in subsequent Bulletins. However, to avoid delay in reporting certain high lights of the meetings, the following are presented:

1. Business meeting: Sunday morning, October 29th. Dr. Robert Downs, President, presiding; his report excellent; progress report on Specialty Board made by Dr. Jack Pelton (see ADA meeting report); report made as follows on award made to Dr. Fred S. McKay:

"Your Committee following instructions received at the last Annual Meeting of this organization, had a parchment plaque award prepared for Dr. Fred S. McKay. This committee made the presentation to him in Colorado Springs, Colorado, in June of this year.

"Because of the delay in manufacturing the Award and the inability to arrange a time mutually convenient to Doctor McKay and the Committee, the Award was not made on May 8th as planned. The date of May 8th, 1908, is significant since it is the earliest recorded date in America to which the beginning of the study of Fluorosis might be assigned. It was on May 8th, 1908, that Dr. Fred S. McKay was appointed a member of the investigating committee of the Colorado Springs Dental Society and from whose interest, effort and investment in time and personal funds has sprung the many contributions of others to the important knowledge on Fluorine and its relation to the dental structures.

"Doctor McKay was recognized in the award by this association "for his original and continuous studies of mottled enamel since May 8th, 1908, which demonstrated the fluorine - dental health relationship for the universal and perpetual benefit of the dental profession and all mankind."

"Respectfully submitted with the request that this report be accepted.

Signed:
W. J. Pelton
R. A. Downs, Chairman"

Doctor McKay's letter of acknowledgment read as follows:

"October 20, 1950

Dr. Carl L. Sebelius,
Secretary-Treasurer
American Association of
Public Health Dentists
420 Sixth Avenue N.
Nashville 3, Tennessee

My Dear Doctor Sebelius:

"Since the last previous meeting about a year ago, there has been no opportunity until the present time for me to convey my acknowledgment to the association of the Award that was conferred upon me in May.

"But, although several months have passed, in no sense has my deep appreciation of this honor diminished. Rather my feeling has assumed an increased sense of satisfaction. In as much as the Certificate refers specifically to the reasons for its award, I am made conscious of the singleness

of purpose in the aims of the Association and my own efforts through the years that have passed.

"This common purpose is no where emphasized more strongly than through the activities and efforts of the Association and for this reason your Award to me takes on a particular significance that adds to my gratification in a very personal way.

"Will you then present this expression of my feelings to the Association at the coming meeting.

Most sincerely yours,

Frederick S. McKay"

Resolutions submitted and passed:

Fluoridation--

"RESOLVED that the American Association of Public Health Dentists recommend and encourage the fluoridation of public water supplies for the partial control of dental caries where the community can meet and maintain the standards required by the State health authority."

Frank C. Cady--

"Whereas, the foundation for the American Association of Public Health Dentists was laid thirteen years ago in this city during an annual meeting of the American Dental Association, and

"Whereas, this organization had become a successful and influential body in public health affairs and a guiding influence to the dental profession, and

"Whereas, Dr. Frank C. Cady has served the Association in many capacities, having at one time or another been a member of the Executive Council, Secretary, President and, finally, Editor of the Bulletin, and

"Whereas, this Association is grateful and desires to express suitably its appreciation of Dr. Cady's interest and efforts, therefore be it Resolved that the American Association of Public Health Dentists unanimously confer upon Dr. Frank C. Cady honorary membership in this Association."

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Election of Officers:

President-Elect, Dr. Philip Blackerby; Executive Council, Dr. John Chrietzberg, Dr. John Knutson, Dr. Robert Downs. Dr. William Jordan advanced from Presidency-Elect to Presidency. Dr. Carl Sobelius continues as Secretary Treasurer.

The afternoon session saw the following program presented by Dr. Norman Gerrie, Chairman of the Program Committee:

Subject: Ancillary Personnel.

Moderator: Basil G. Bibby, D.D.S., Rochester, N.Y.

Sub-Topic 1: Dental Hygienists
Introductory Paper: James H. Pence, D.D.S., Omaha, Nebraska.
Discussant: Russell W. Bunting, D.D.S., Ann Arbor, Michigan.
General Discussion.

Sub-Topic 2: Dental Assistants
Introductory Paper: Charles J. Gillooly, D.D.S., Richmond, Ind.

Discussant: Maynard K. Hine, D.D.S., Indianapolis, Ind.
General Discussion.

Sub-Topic 3: Specially Trained Personnel.

Introductory Paper: Allen O. Gruebbel, D.D.S., Chicago, Ill.
Discussant: John Fulton, D.D.S., Washington, D.C.
General Discussion.

Council-Directors Combined Meeting

Saturday, October 28th, was devoted to a combined meeting of members of the ADA Council on Dental Health, Chairmen of State Association Councils and State Dental Directors. With Dr. Leo Schoony presiding at the morning session, Dr. Philip Phair, a former state dental director and now on staff of ADA Central Office, ably presented certain problems involved in planning and administering community dental health programs. Wide open audience participation followed.

The afternoon session heard an equally excellent presentation by Dr. Allen Gruebbel (ADA Council Secretary) and similar thought-provoking discussion by the audience. The two sessions were then summarized by Dr. Kenneth Easlick in his customary manner of keen analysis.

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Dental Directors

A short business meeting of the State and Territorial Dental Directors Association was held on Sunday, October 29th. Reports and committee appointments were made. Dr. David Ast, President, presided.

ADA Meeting

The number of public health items considered by the Board of Trustees, Reference Committees (Dr. Fred Wertheimer did a "swell" job) and the House of Delegates had those interested in public dental health in a veritable "dither." Following are the main items to receive the approval of the above ADA bodies:

1. Establishment of an ADA Section on Public Health.

2. Approval of the designation of Public Health Dentistry as a "Specialty."

3. Passage of a resolution recommending fluoridation of public water supplies.

4. Passage of a resolution calling for support of efforts to maintain parity in dental and medical administration of public health activities.

5. Decision relative to National Children's Dental Health Day that it shall be held on the first Monday in February. The House instructed the Council on Dental Health to study the matter further "in the hope that means can be developed whereby the constituent societies who find this date unsuitable may participate in a program of a similar type with adequate support from the Association."

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The ADA meeting also included excellent sessions of the Pedodontic Section, with Dr. John Chrietzberg as Chairman. The American Society for the Promotion of Dentistry for

Children met and reportedly had an excellent program, excellent attendance, and great interest.

Summary--

It was, from every aspect, one of the most momentous series of meetings ever experienced by those interested in public dental health.

NORTH CARCLINA REPORT

A brief report in the "Tooth News" of the North Carolina State Board of Health, Dental Division, states that during the school year 1949-50 dental inspections were given 108,488 children. Necessary dental care was given to 32,437 "underprivileged children," the others being referred to their own dentists. Class-room talks numbering 2,216 were made to 77,140 children.

FLUORIDATION ENDORSEMENT

Numerous states have gone on record as endorsing the fluoridation of public water supplies as a deterrent to future dental decay. These endorsements have been made both by dental societies and state health agencies and all follow the pattern of those "resolutions" previously published in the Bulletin. It is gratifying that the resolutions contain the extremely important qualifying clause "where such a program can meet and maintain the standards recommended by local and state health authorities." To deviate from an established standard would threaten the successful promotion of the latest weapon against dental ill health.

TRANSFER

Dr. Olin E. Hoffman, formerly dental director in Iowa, has been appointed state dental director of the Washington State Department of Health. He succeeds Dr. W. Philip Phair, who is now associated with the A.D.A. Council on Dental Health.

IMPREGNATION - PRO

According to an article by R. Gordon Agnew, Associate Professor of Oral Diagnosis and Periodontology, College of Dentistry, University of California (Journal, California State Dental Association, September-October 1950) the impregnation of tooth surfaces (following the Gottlieb method), as a deterrent to dental decay, is "another control mechanism of substantial clinical promise." Dr. Agnew does not cite the specific results of experiments on which the "clinical promise" is based. He does refer to the contrary findings of Dr. Ast. (see below)

IMPREGNATION - CON

The Journal of the American Dental Association and a News Release of that organization report the results of a test on the efficacy of the Gottlieb impregnation method in partially preventing future dental caries. Initiated by Dr. David B. Ast, dental director, Dr. Arthur Bushel, associate dental director, and Helen C. Chase, biostatistican of the New York State Department of Health, the test was made on 179 twelve to fifteen year old boys and girls. One side of the mouth was treated, the other, untreated, being used as a control. Little appreciable differences were noted (in new caries

incidence) in the treated and untreated teeth on observation at the end of a year. Statistically, untreated teeth showed only 1.7% more new carious cavities than did the treated teeth. Dr. Ast and his associates conclude, "No appreciable caries prophylactic (prevention of decay) is derived from the impregnation of tooth enamel."

PROMOTER - ESS

Dr. Polly Ayres is not only doing a bang-up job of developing an interesting and attention attracting program for the Dental Section meeting of the A.P.H.A. Southern Branch next Spring, but is also promoting an audience to attend the meeting. She is working with the Branch membership committee and hopes that all A.A.P.H.D. members whose location makes it feasible will affiliate with the Southern Branch and attend its meetings. Nor is she limiting her promotion to dental personnel only. Any public health personnel are urged to affiliate.

WORKSHOP

The third annual workshop of the Tennessee State Dental Association will be conducted January 19th and 20th, 1951, at the Andrew Jackson Hotel in Nashville, Tennessee, with "community dental programs" as its theme according to a report received from Dr. Carl L. Sebelius.

W H O Fellowship

Dr. Carl L. Sebelius, Tennessee State Dental Director, has been awarded a W H O Fellowship under which he will spend the months of March, April and May observing dental health programs in England and the Scandinavian countries. This, a signal honor, rates our felicitations to Carl and they are hereby extended with a sincere "Bon Voyage."

DENTAL CARE FOR THE CEREBRAL PALSIED

Dental care for victims of all of the various types of palsy is receiving increasing attention on the part of both dental practitioners and dental health personnel. Noteworthy among the several instances of concrete planning of programs for such dental care is that received from Dr. Frank M. Erlenbach, Chief, Division of Dental Hygiene, Connecticut State Department of Health. His Division, in cooperation with the Department's Division of Crippled Children and the Council on Dental Health of the Connecticut State Dental Association, conducted an institute on Oct. 11th with an agenda as follows:

Wednesday, October 11, 1950

1:30 - 2:15 P.M. - "Medical Aspects of Cerebral Palsy". Patients will be presented.
Louis Spekter, M.D., Chief, Division Crippled Children, Connecticut State Dept. of Health

2:30 - 3:15 P.M. - "The New York Plan for Dental Treatment of Cerebral Palsy"

James Jay, D.D.S., President
Robert Fisher, D.D.S., Secretary-Treasurer Dental Guidance Council for Cerebral Palsy - New York City.

3:30 - 4:15 P.M. - "Dental Technique Involved in Care of Cerebral Palsy Patients."

Elwood Rider, D.D.S.

4:30 - 5:15 P.M. - A. "Demonstration of Occupational Therapy"
B. "Demonstration of Speech Therapy"
C. "Demonstration of Physical Therapy"
Staff of Newington Home and Hospital for Crippled Children

5:15 - 5:45 P.M. - Summary and Discussion.

In connection with the subject of dental care for the cerebral palsied reference may be made to an article by Richard C. Leonard in the August issue of the Journal of the American Dental Association. A limited number of reprints have been secured and are available to Association members.

MINNESOTA ANNUAL REPORT

An annual report comprising as many pages as an average sized Bulletin has been received from Dr. William A. Jordan, Director, Division of Dental Health of the Minnesota State Department of Health. Obviously impossible to publish in detail, the total figures of the 1949-50 school year are reported as follows:

Number of schools reporting - 3,138; pupils represented - 234,699; counties represented - 79; percentage "O.K." teeth, town and village public schools 53%, parochial schools, 60%, rural public schools, 50%; total number 100% rooms or schools, 660.

LAY ARTICLE

An unusually good article on the status of recent efforts to control dental caries appears in the October, 1950, issue of Better Homes and Gardens. Entitled "The Truth About Preventing Tooth Decay" and written by Donald G. Cooley, the article provides the magazine's readers with a very fair and straight forward analysis of the claims and the real merit of recently announced means of reducing caries. The author even makes an effort to explain the intricacies of statistics. This effort may be an example of the "complexities of simplicity," but he should be given E for Effort.

The author states his having had the cooperation of A.D.A. personnel in preparing the article and approval of that organization for its publication. His story reflects the wisdom of having sought that assistance.

The principal criticism that may be directed toward the article is its rather unfortunate placement within the first advertising pages of the magazine. It is to be feared that too many subscribers may miss it. It deserved more limelight.

CONGRATULATIONS!!!

Dr. Joe Doakes, dental director of the Misinformya State Department of Health is the proud father of triplets born Sept. 31, 1950. In the interest of economy Joe passed out three cigarettes in place of the traditional cigar. Mother and babies (two girls and one boy) are all doing well. Joe is slightly disturbed and requested a copy of the salary survey table. (Editor's Note: if you won't send in news items I can make 'em up)..

NOTES AND NEWS

PERSONNEL PROBLEM

So much has been written in other dental periodicals relative to the "draft" of dentists into the Federal armed services as to make unnecessary its detailing herein. However, the removal from civilian life, by recall, volunteering or by draft, of the suggested large number of dentists will greatly affect dental health programs, particularly those in which corrective care is a part.

By far the largest number of "school dentists" are young men of an age most apt to be on first call by Federal Procurement Agencies. In World War II the loss of this age group resulted in temporary cessation of many school dental health programs. And since many of these dentists were and are part-time school health clinicians their removal from private practice resulted in an increased patient load of non-called practitioners that precluded their participation in health department sponsored clinics. Apparently the same situation is again to be faced.

FIRST ?

Roundabout rumor (as roundabout as to Maryland from Indiana by the way of Chicago, to be exact) has it that some claim of being the "first" to televise a dental health program is being made by Indiana. Much as one may dislike disputing the claims of one's native state issue must be taken because ye Editor took part in a television program over Station W A A M in February, 1949. Is that a "first"?

As a matter of fact, we have only a report from Jack Pelton on the matter of the Indiana claim and he did not actually say the claim was made. It seems a picture of an Indiana television program appeared in that state's public health periodical and (according to Jack) in the picture Roy Smiley, Indiana State Dental Director, served "as a bracket for an instrument tray." Jack claims this role, at least, is a "first." We didn't see the picture and are noting the matter only in the hope that it will egg Roy on to retaliating in such a fashion that a Notes & News item for the next issue may be forthcoming from him.

SPECIAL MEETING

A special meeting of the State and Territorial Dental Directors Association was called by the President, Dr. David B. Ast, for Monday, Oct. 30th, at Atlantic City meeting.

MEMBERSHIP ROSTER

The membership roster shows a membership of 108 Active Members, 17 Associate Members, and one Honorary Member, or a total of 126, and will be mailed separately to all members.

NOTES AND NEWS

ANNOUNCEMENT OF MEETING OF AMERICAN ACADEMY FOR THE ADVANCEMENT OF SCIENCE TO BE HELD IN CLEVELAND, OHIO, DEC. 26 TO 30, 1950

N2 - Subsection Nd. - Dentistry

Chairman, The Chairman of the Section and of Local Arrangements, Thomas J. Hill, Western Reserve University, Institute of Pathology, Cleveland, Ohio.

Secretary, Russell W. Bunting, University of Michigan, School of Dentistry, Ann Arbor, Mich.

Program of Subsection Nd.

Friday Evening, December 29.

7:30 P.M. Municipal Auditorium
Thomas J. Hill, presiding

1. Dean, H. Trendlay, National Institute of Health, Bethesda, Maryland. Dental Research at the National Institutes of Health.

2. To be announced. The Role of Dentistry in Atomic Warfare Civil Defense.

Saturday Morning, December 30.

9:00 A.M. Municipal Auditorium
Isaac Schour, presiding

1. Schlack, Carl A. Office of Naval Research, Washington, D.C. Past and Present Dental Researches in the Navy.

2. Dickson, George. National Bureau of Standards, Washington, D.C. Self Curing Resins for Dental Restorations.

3. Bartlestone, Herbert J. Veteran's Administration, Washington, D.C. I/131 Studies of Enamel and Dentine Permeability in vivo.

Saturday Afternoon, December 30.

2:00 P.M. Municipal Auditorium
Paul C. Kitchin, presiding

1. Bernier, Joseph L, Armed Forces Institute of Pathology, Washington, D.C. Further Studies on the Incidence of Epithelial Malignancies of the Oral Regions.

2. Burnett, George W., Army Medical Research Center, Dental Branch, Washington, D.C. An Investigation of the Role of Filamentous Organisms in Dental Caries.

3. Palmer, Hubert B., Department of Air Force, Washington, D.C. A Study of the Resistance of Human Molar Teeth to Decalcification Caused by Growth Products of Lactobacillus Acidophilus.